The French Armed Forces are heavily deployed both at home and overseas. On the security front, the terrorist threat is still assessed as high in France and operation “Sentinelle” (Guardian) is still going on alongside operation “Résilience” (Resilience) to support civilian authorities in their fight against Covid.

Overseas, the French Armed Forces are maintaining their contribution to the defense of the Nation, its citizens, and its interests, showing strong determination to prevail with the support of its allies and partners and contributing to France’s commitment for more global security.

Focused on readiness building and modernization, the French Armed Forces have reached back their regular operational pace and work to build their future under the sign of transformation kicked and innovation.
Table of Content

1 Operations  3
   Deployment of the French armed forces  3
   Theater News  3
      CHAMMAL - Multinational joint operations in Syria and Iraq  3
      BARKHANE – Global sub-Saharan anti-terrorist mission  4
      SENTINELLE & RESILIENCE – Homeland protection  5
   From the Training Field  5
      French Armed Forces conduct counter-terrorism exercise in the Mediterranean  5
      The Air Force Space Command holds for the first-time exercise AsterX 2021  7
      Alpine Training in Savoie  7
      International exercise in the United Arab Emirates  8

2 What do great competition and unpredictability mean for the French Army?  9

3 Military History  10

4 News from the intangible fields  11
   Space is challenging, France works on it  11
   Reinforced Cyber Security for BARKHANE  12
   Toulouse will host the new NATO Space Center of Excellence  12
   A new Joint SIGINT System  13

5 International cooperation  14
   Warfighter 21-4, first participation for a French division  14
   Task Force TAKUBA is getting stronger  15
   French Forces in UAE: Arrival of the Mine Warfare Group in Abu Dhabi  16

6 Innovation Corner  17
   GAIA, the innovation cluster for the Army  17
   Military academy and future robots: try before you adopt’em!  17
   Exoskeletons tested by users  18
   France signed for three Advanced E2-D Hawkeye  19
   Nexter’s tank gun advanced technology  20

7 Calendar  20
1 Operations

Deployment of the French armed forces

Deployment of Army, Air Force, Navy and Gendarmerie

Theater News

CHAMMAL - Multinational joint operations in Syria and Iraq

Launched in September 2014, at the request of the Iraqi government and in coordination with allied forces, operation CHAMMAL provides air and ground support as well as training to Iraqi forces committed against ISIS and other terrorist groups. The operation has been extended to Syria following the terrorist attacks in November 2015.
France’s contribution to the operations is mainly supported by two detachments of the French Air Force. Based in Jordan and in the United Arab Emirates, they participate to the allied air strikes against ISIS.

Following the request of US CENTCOM Commander general Kenneth F. McKenzie to the French armed forces deputy commander for joint operations (SCOPS for “sous-chef des opérations”) the French air naval group (GAN for “groupe aéronaval”) assumed command of the US naval forces Central Command (NAVCENT)’s Task Force (FT) 50 from March 31st until April 24th.

Such interoperability between two carrier strike groups belonging to different nations’ navies is quite good news not only from a pure military perspective within a coalition of allies, but it also sends a strong political message about the solidarity existing between these nations. France belongs to the ‘happy few’ entrusted by the US to take over the command of their own task force in order to ensure stability in the region. Both countries share the very same vision of the terrorist threat in this area of the globe.

BARKHANE –
Global sub-Saharan anti-terrorist mission

Operation BARKHANE, which spans over five countries in the Sahel region of North Africa, started at the beginning of August 2014 after the completion of Operation Serval. With their main base located in the Chadian capital N’Djamena, the French forces operate in Burkina Faso, Mali, Mauritania, Chad, and Niger.

During the last G5 Sahel summit held in February, French President Emmanuel Macron reaffirmed the unwavering support of France to its allies in the Sahelian Saharan Strip. Top priorities of the partners have been reminded: fight the terrorist groups, reinforce the local forces, support the return of the governance in reconquered territories and support the development of the region.

On the battlefield, BARKHANE forces conducted wide operations to disrupt the enemy’s main lines of communication and supply. While Battle Group Douaumont conducted security operations and intelligence collection in the Hombori region, Battle Group Bison completed recognition missions alongside National Road 16. Reinforced by French and Malian units, Bison managed to conduct patrols and attacks in depth that led to the destruction of multiple weapon caches and vehicles.
To support the high operational tempo in the two different areas of operation, air supply played a key role. Operating from Niamey, N’djamena or Gao, the A 400M ATLAS and the C-130 J HERCULES represent two critical assets.

SENTINELLE & RESILIENCE – Homeland protection

Committing 10,000 soldiers across the country, operation SENTINELLE was launched to support the security forces in the aftermath of the November 2015 terrorist attacks. This operation is still ongoing.

The operation SENTINELLE still includes three responsive layers:

- a permanent operational force of 2,600 men, whose objective is to secure the most sensitive and vulnerable areas.
- a planned reinforcement echelon of 4,400 men, helping to secure occasional or seasonal events.
- a strategic reserve of 3,000 men in the hands of the French President.

To support civil services committed in the fight against COVID-19, the Armed Forces have adapted the layout of operation RESILIENCE launched in March 2020. Since late March, the Armed Forces Health Service has involved its military hospital network present in the main cities to contribute to the acceleration of the vaccination campaign launched by the Public Health Ministry in January. To extend this support in the rest of the national territory, some units have been tasked to build and run Military Vaccination Centers. Managed by soldiers of the 12th Cuirassiers Regiment (Olivet), the first one opened on April 12 running 5/7 for a first evaluation phase.

Today, 13,000 soldiers, airmen and sailors are deployed in France mainland and overseas territories in the frame of these two operations.

From the Training Field

French Armed Forces conduct counter-terrorism exercise in the Mediterranean

On March 13, 2021, the French armed forces carried out an operational preparation activity dedicated to force projection in the central Mediterranean and more specifically to Crete Island. Called RHÉA, it engaged joint and multi-domain resources.

As part of maintaining its operational know-how in the field of complex long-range force projection, the armies planned and carried out a counterterrorism exercise based on the presence of a terrorist leader on board a merchant ship.
In very short time, many French land, naval and air resources, both conventional and special forces, were integrated to carry out this exercise far from its bases. The French Navy mobilized the Mistral amphibious helicopter carrier (PHA), the Languedoc multi-mission frigate (FREMM), the Loire metropolitan support and assistance building (BSAM), an Atlantique 2 and a Caiman Marine, the Air and Space Force, Rafale, C135 refuellers, an E-3F and a C130J in refueller configuration, and the Special Forces Command (COS) mobilized Marine commandos, Caracal helicopters and a C-130H-30. Army soldiers were also involved in RHÉA, particularly in the preparation and delivery of a Marine commando boat and specific equipment.

With a permanent presence in the Mediterranean to contribute to the security of this strategically important area, the most remote areas of which are only a 3-hour flight from the metropolis, France is demonstrating, through this counter-terrorism exercise in sea, its desire to participate in the preservation of the security and stability of the Mediterranean, alongside its allies.

RHÉA illustrates the capacity of France, to intervene, for the benefit of all, against evolving threats, including at sea.
The Air Force Space Command holds for the first-time exercise AsterX 2021

“You are all space fighters”. This is how Colonel Christophe Michel, director of the "AsterX 2021" exercise, ended his speech for the launch of this first edition.

All of the French Air Force Space Command (CDE) operational units were participating in the exercise: the Space Operations Command and Control Center (C3OS) in Paris, the Military Satellite Observation Center (CMOS) in Creil, and the Military Monitoring Center for Space Objects (COSMOS) from Lyon. All of them worked in close collaboration with the National Center for Space Studies (CNES), industry, German and American partners.

On "AsterX", a new simulation architecture that identically reproduces the operational systems used by operators daily was devised. This simulator combines a database made up of 10,000 spatial objects, 5 operational applications, the generation of 18 spatial events and a time management tool allowing to compress 4 real weeks into 4 days of training.

Operators had to deal with - for example, anti-satellite weapons fire, rendez-vous in space, and solar weather phenomena. While training progressed in a fast-paced environment, it contributed to the readiness of the force and to the improvement of CDE operational processes.

Alpine Training in Savoie

Building a hardened army requires strengthening rusticity at the individual level and consolidate the units’ ability to fight and conduct operations in highly demanding environments and particular conditions.

These general objectives were at the heart of the brigade-level open field exercise organized by the 27th Mountain Infantry Brigade (27th BIM) in the Bourg Saint-Maurice valley (Savoie).
From March 22 to 26, this first edition called “Quartz” represented for the chasseurs alpins a great opportunity to maintain and develop their very specific skills in a training scenario as close as possible to the reality. For five days, the units involved completed deep infiltrations in altitude, live fire trainings, and reconnaissance with light armored vehicles. From an educational perspective, the exercise was also used to practice several survival techniques and know-how.

**International exercise in the United Arab Emirates**

The eleventh edition of the El-HIMEIMAT exercise, an essential and regular meeting between the French forces in the United Arab Emirates (FFUA) and the Emirati forces, took place from March 7 to 18, tightening the links between the armed forces of the two allied countries.

Focused on cooperation and interoperability, the 2021 edition took place for the very first time in the urban combat training complex of Al Amra. Reproducing a 100-hectare city, the facilities offer a very realistic and challenging environment. Divided in two parts, the exercise began with an acclimatization phase followed by an affiliation training which saw exchanges between the participants over specific skills such as Nuclear and Chemical warfare, infantry combat in an urban area or engineers’ techniques to fight improvised explosive devices.
At the end, the whole training sequence validated the FFUAE’s ability to support the deployment of the French forward forces in the region and contributed to deepen the cooperation with the UAEs forces through a combined arms infantry company integrated to the French Battle Group.

2 What do great competition and unpredictability mean for the French Army?

Combined to the rise of tensions and aggressiveness, the widening of conflictual fields is one of the major evolutions observed over the last decade. To face the return of great competition and a new kind of unpredictability, the French Army has initiated a global review and transformation of its strategic architecture. But, before going further, let’s talk more about FR Army’s vision on these two framing trends.

For the Army, several characteristics of a new competition cycle must be considered:

- The end of multilateralism and the decrease of the collective management of violence that lead certain countries to put theirs interests first endangering global stability.
- Nibbling strategy to impose “faits accomplis” and avoid direct armed confrontation. This indirect course of action is prepared and combined to a staged “clash of stories” and integrated to strategic communication plans of great competitors.
- Great competitors are ready for armed escalation and conflicts between states.

In that context, fields of confrontation previously contained to armed conflicts will be much larger in the future:

- All environments contested and opened to conflicts including homeland.
- Every compartment of a land operation (deep, contact, rear), new battlefields (space, cyber) and intangible fields exploited in the fight of wills in which the moral of the force will be critical.

Therefore, the decisive phases of the new crisis-tempo might be:

- Global competition (diplomatic, economic, financial...) where the Army contributes to the Nation’s effort offering influence (military cooperation, alliances) and deterrence (forward presence and emergency intervention echelons).
- Contestation where the notion of threshold is central as competitors maneuver to achieve their goals under the state conflict level.
- Escalation management with the abilities to face an opened armed conflict between states and / or deescalate and reach back lower levels of violence. For both, making one’s intentions unreadable to the enemy is essential.
Therefore, a renewed and ambitious land strategic offer requires:

- **Credibility** through a complete, full-size, and robust tool.
- **Competitivity** through technical performance, readiness, interoperability with strategic allies and global deterrence.
- **Winning “the clash of stories”** and the confrontation of wills to make one’s model prevail.
- Mastery of “escalation and de-escalation management” with the ability to read enemy’s intentions and penetrate his mind to ensure freedom of action and initiative.
- **Operational superiority** using a large array of effects to exploit enemy’s vulnerabilities and weaknesses.

At the end of his speech, the Head of the French Army, general Thierry Burkhard, reminded the importance to keep this intellectual frame in mind to conduct a relevant and efficient transformation of the Army.

### 3 Military History

In May 1780, the Count of Rochambeau sailed with admiral de Ternay from the sea port of Brest in France to Newport on the eastern coast of the emerging United States. Preceeded by General Marquis de Lafayette a few months earlier, the French expedition, well known as the “Expedition particulière”, or in English, the “Special Expedition”, is a great example of success enabled by the coherence between the goals of war, the resources allocated, the conduct of operations and the final end state.

Since 1776, France and Britain are indirectly opposing one to another and the costs of the 7 year war have made finance a big issue. However, the French assess that a proper effort can bring the old British enemy to give up opposition.

On the ground, France sent a robust but limited combined arms force of 6,000 men. Supported by the newly reorganized French navy, the force took part in a strategic campaign which led to the ground battle of Yorktown, when general Corwallis got trapped on the Chesapeake River by the French fleet from admiral de Grasse. It ended with the treaty of Paris and the victory of the young United States. The whole sequence might bring some thoughts.
Coherence is the key word. The clear political goal ensured the mobilization of a tailored Force with a consistent financial support. The idea is to bring at the right moment the right amount of force to support efficiently the Americans. The troop came under the command of George Washington with a balanced “tactical control”, disciplined and able to last among the population.

On the operational point of view, the renewal of the French navy, to face the powerful British rival, played a central role in the maneuver. On the tactical aspect, Lafayette will say afterwards that this campaign had been a series of encounters of patrols... It had been more than that but let’s keep in mind that tactics were the natural consequence of the relevant approaches at upper levels.

The more a relation can withhold paradoxes, the stronger it is. The sincere ties of trust between the regiments and the militias made the axiom obvious.

Finally, a young officer of Rochambeau’s staff was particularly marked by this example of virtuous and coherent command... He will later become famous as Marshall Berthier, Napoleon’s Chief of Staff.

4 News from the intangible fields

Space is challenging, France works on it

France has a long space history. Recently, the French government decided to enhance its investment in this domain to face new threats and published its Defense space strategy. It has reorganized its military space forces under a Space Command within the recently
renamed French Air and Space Force. It is also developing technological programs to achieve its objectives. France has for example successfully launched its second ISR satellite called CSO dedicated to military reconnaissance.

Additionally, President Macron has announced that exceptionally, 700 million euros will be invested for the development of space capabilities in addition to the budget already allocated by the military planning law.

France is conducting an ambitious policy to replace and improve its capabilities with a new satellite for imagery (CSO), another one for the electromagnetic spectrum (CERES), the Syracuse satellite for telecommunication and the update of the GRAVES system for the space domain awareness.

Furthermore, the French air and space force is enhancing its organization and is renewing its partnership with the French civilian space agency (CNES). The education aspect is not forgotten with the training of space experts through the Schriever space program for example.

In recognition of France’s investment for space, NATO has decided to establish a space center of excellence in Toulouse.

To sum up, space is challenging, and it is essential that allies work together with the right tools to preserve freedom of action in this contested and strategic environment.

**Reinforced Cyber Security for BARKHANE**

Responsible for the digital protection of the whole force from its headquarters in N’Djamena, the Security Operations Center (SOC) has just strongly enhanced its capabilities thanks to the implementation of the new version of the MTLID-T2 software designed and developed by Airbus Cybersecurity.

With this new tool, which is more complete, efficient, intuitive and easy to use, the SOC can offer better protection services to the force. Furthermore, due to its modular architecture, updates will be much easier and faster to get applied.

Thwarting increasing daily attacks in this new confrontation field, the SOC contributes decisively to the BARKHANE survivability and freedom of action.

**Toulouse will host the new NATO Space Center of Excellence**

In 2019, NATO allies adopted a space policy which recognizes space as a theatre of operations in the same way as the air, land, sea, and cyber theatres. Following this decision, NATO has selected France to create a new center of excellence dedicated to space. This structure will be located in Toulouse, “at the heart of Europe’s largest space ecosystem”.

FOR MORE INFORMATION, VISIT DEFENSE.GOUV.FR.
Located in the same environment as the French Space Command and Space Academy, the Space Lab, leading international space industries, laboratories, universities, and research centers, it will benefit from unique expertise and sources of inspiration from private and public sectors, the military and civilian worlds, industrial and academic teams. The new center will carry out doctrinal and prospective works, training, exercises, analyses, and forward planning, autonomously or in partnership with the French Space Command.

A new Joint SIGINT System

France is to acquire its first joint tactical signals intelligence system from Thales and Airbus. Early capabilities of the new system will be delivered in 2023 and the last ones by 2025.

The system will consist of a series of combinable sensors adapted to the needs of operational environments and theater (land, sea, or air). The purpose of the global system is to provide the French armed forces with a homogeneous infrastructure through an operational continuity and a joint exploitation of the information collected. The new system will modernize and complete the current tactical sigint capabilities, taking into consideration new communications technologies used by adversaries.

In the Army, the new capability will be used by the 54th Signal Regiment on Scorpion vehicles. It will also equip the Navy’s ships and the Atlantic 2 maritime patrol aircraft replacing the current capacities. The Air and Space Force will use the system as deployable ground equipment to protect air bases.
5 International cooperation

Warfighter 21-4, first participation for a French division

Between April 6 and April 15, exercise Warfighter has been in full swing at Fort Hood, Texas. Around 1,000 French soldiers were deployed for this high intensity combat training exercise.

With the 3rd British Division, the 3rd French Division and the US 1st Armor Division under the command of the III Corps, interoperability was the key to Warfighter 21-4. Sharing similar views on modernization towards large-scale combat operations readiness, the three Armies had much to share on human, technical and procedural aspects.

The beating heart of this computer simulation driven event is WARSIM, the US military’s simulation tool. WARSIM or Warfighter’s Simulation is the collation point for the exercise’s combined operations, but also the animation management point that allows a dense and accurate after-action analysis.

During the exercise, units had to deal with a realistic fight animated by a powerful artificial intelligence and some incidents manually introduced for educational purposes. The so called “White Cards” are mainly used to simulate effects in intangible fields or make command posts reflect on unscheduled “what ifs”.

Beyond the rich and demanding tactical sequences, the challenge was also to gather more than 3,000 soldiers coming from three different nations and make the three divisions fight together under the IIIrd Corps command in the most compatible and integrated ways. In addition to the technical and procedural aspects of interoperability, communication was a key enabler for common understanding all along the maneuver. The partners’ will to prevail despite cultural differences and COVID restrictions guided this common and ambitious achievement. That is the reason why for Major General Michon, Commanding General of the 3rd French Division, “the results are beyond expectations, both in terms of tactical and technical know-how and in terms of interoperability.”

During the coming months, the three partners will continue to unpack and dig in the data collected to supplement their lessons learned. It will also be used by the French Army to prepare its next major rendez-vous, the division Orion exercise in early 2023.
Task Force TAKUBA is getting stronger

Integrated to the Global Barkhane chain of command, the European SOF Task Force TAKUBA is moving forward as it is aggregating the new capabilities offered by the Swedish detachment.

Designed to advise, assist, and support the local armed forces in the fight against the armed terrorist groups, the Task Force brings additional and critical capabilities to the Barkhane Force.

As a reminder, its first mission consists in the mentorship of the Light Reconnaissance Intervention Units of the Malian Armed Forces originally trained by instructors of the 2nd Foreign Infantry Regiment. Beyond this primary mission, the aim is to support the engagement of the trained units during fighting operations.

Following its initial operational statement last July, TF TAKUBA has set up two groups that embody the European solidarity in the fight against terrorism in Africa. The first sub-unit is composed of French & Estonian SOF soldiers and the second one gathers French and Czech SOF operators. Committed to their mentorship missions, the two sub-units have already proved their valor on the battlefield alongside their Malian comrades.

Since February, Sweden has brought its contribution into the fight with troops dedicated to helicopter-borne rapid-responses and deployable to manage emergency situations and unforeseen incidents. To complete their mission, the 150 Swedish soldiers operate UH-60 helicopters as well as a C-130 Hercules aircraft. If needed, the 150-size unit can be reinforced by another 100-soldier detachment.

In the future, other European partners might join this unique Task Force and contribute to Europe’s global security directly with “boots on the ground”.

FOR MORE INFORMATION, VISIT DEFENSE.GOUV.FR.
French Forces in UAE: Arrival of the Mine Warfare Group in Abu Dhabi

On February 7, 2021, as part of the deployment of the Mine Warfare Group 21 (GGDM21), a chartered vessel, carrying two tripartite mine hunters (CMT) L’Aigle and Céphée, arrived at their destination, the port of Abu Dhabi. This deployment highlights the ability of the French Navy to conduct missions far from its metropolitan bases. This is the 6th time in ten years that a mine warfare group has been deployed in this area and the 5th time that this chartered vessel projection has been implemented.

After a reconditioning phase, the two tripartite mine hunters will begin their detection operations and, possibly, demining operations. This deployment contributes to:

- the security of energy supply routes and areas of national and allied interest in the Arab-Persian Gulf: an area of vital strategic interest for French strategic supplies and an area of almost permanent deployment of the French navy;
- maintaining the freedom of navigation;
- strengthening the interoperability with French partners present in the area.

Placed under the operational control of Rear Admiral Fayard, Commander of the Indian Ocean Maritime Zone (ALINDIEN), this mine warfare group is made up of the two tripartite mine hunters and an operational staff. It will be deployed for several months in this area.

A field of excellence for the French Navy, mine warfare makes it possible each year to neutralize around 2,000 explosive devices, or almost 40 per week.

With nearly 650 soldiers deployed, the French Forces stationed in United Arab Emirates is one of the French advanced operational bases abroad. As such, it supports French military assets deployed in the Arab-Persian Gulf and the northern Indian Ocean. This is made possible thanks to the conditions in which it is able to train French soldiers for combat actions in desert and urban areas. As commander of the Indian Ocean Maritime Zone (ALINDIEN), Rear Admiral Fayard has authority over a maritime zone extending from the South of the Suez Canal to the West, and to the East to the western limits of the waters of Burma, Indonesia and Australia. He promotes France’s defense policy and leads bilateral military relations.
6 Innovation Corner

GAIA, the innovation cluster for the Army

To support and encourage scaling-up of the identified innovative solutions, the Army has just created in Île-de-France (Paris region), a dedicated cluster. Built-up in partnership with AID (Agence Innovation Défense, FR DoD Innovation Agency) and designed to link up Army users, universities and industries, GAIA will be focused on air-land equipment.

This innovation center aims for an optimal or at least a better connection between the main players in armament, defense, and scientific research active around Satory and Saclay. The objective is to aggregate faster their intelligence, their experience, and the most valuable mature technologies in a short innovative loop. In brief, the primary goals and actions of GAIA are to detect, capture, and experiment mature technologies from the civil sector within the Army.

As an illustration, GAIA will be focused on critical future capabilities like robot fleet management, high speed mobile networks, advanced manufacturing, embarked energy management systems or fighters’ burden lowering systems.

Strongly committed to its modernization, the French Army can now rely on a new tool.

Military academy and future robots: try before you adopt’em!

Led by the Coëtquidan military Schools Research Center (CREC), a two-day exercise involved cadets in an operational evaluation of the tactical benefit of ground robots. Supported by French firms such as Nexter Systems and Shark Robotics (that has a partnership with the American company Boston Robotics for the distribution of SPOT in Europe), the tactical exploration was particularly enriching for the future officers.

Using robots, why and what for? In a few words, that was the question asked to the cadets by the CREC. The origin of this innovative approach is an
article from CREC engineer Gérard de Boisbois-ssel who proposed to analyze the robots’ contribution to military actions through a grid that measures their execution time, aggressiveness, and vulnerabilities.

Four cadets oversaw this applied evaluation project throughout three basic scenarios: an offensive action with the seizure of a crossroads, day and night defensive actions, and a combat sequence in a built-up area. All the actions were performed first without robots and then with their support to determine the gaps between the two courses of action.

The technologies evaluated were SPOT (Boston Robotics), BARRACUDA (in protection configuration with a bullet-proof shield, Shark Robotics), Optio-X20 (armed version of Estonian-made Milrem THeMIS UGV, Nexter), NERVA (small observation robot, Nexter) and the new electrical multipurpose platform Ultro (Nexter). To sum-up, the evaluations showed the better protection brought by the Manned-Unmanned Teaming courses of action and the better time effectiveness of the 100% manned solutions.

At the very end, this experience showed to the future Army young leaders how fruitful a direct cooperation with industry partners can be. That might be the most valuable lesson learned from the exercise.

Exoskeletons tested by users

After the acquisition of a set of passive exoskeletons from the Canadian company Mawashi, the French Army Battle Lab has launched an exploratory campaign to assess and evaluate the operational potential of this technology.

To achieve this goal, three regiments were involved to explore the potential of the technology. First set of tests: commando missions with infiltrations in depth, wounded personnel emergency extraction or patrols in demanding environments like in mountain areas.

Great added values are expected for specific missions like HARPIE Operation against clandestine mining in French Guyana (long patrols in equatorial forest) or SENTINEL operation against terrorist threats in France (long and harassing foot patrols or static surveillance in cities). Lowering soldiers’ burden would be the first tangible objective and added value.
Following the conclusion of this bottom-up course of exploration nourished by users’ feedbacks, the French Army battle lab Terre will determine more precisely the potential of this new tool. In the future, the French army is going to involve more and more its personnel to shorten the innovation loop between labs and the field.

France signed for three Advanced E2-D Hawkeye

On November 4, 2020, the French Minister of the Armed Forces, Florence Parly, confirmed the intention to acquire, via “Foreign Military Sales”, three airborne command and control E-2D Hawkeye planes for the needs of the French Navy, keen to replace its E-2C Hawkeye in service since 1998 within the 4F squadron.

Four months earlier, the Defense Security Cooperation Agency [DSCA], in charge of exports of American military equipment, had issued an opinion recommending that Congress accept such a sale, the amount of which was then estimated at $2 billion. [€1.77 billion].

In addition to the three E-2D Hawkeye, it was intended to deliver, among other things, 10 Rolls Royce T-56-427A turboprop engines [6 installed and 4 spare], 3 mechanical and electronic scanning radars AN / APY-9 capable of simultaneously detecting air and naval targets, 4 electronic support measurement systems [MSE] AN / ALQ-217, 5 L-16 communications systems [Link-16] and IFF devices [friend / enemy identification].

On January 6, E2-D Hawkeye manufacturer Northrop Grumman announced that France had signed a Letter of Offer and Acceptance [LOA] for the three aircrafts. “The LOA enables the US Navy to begin contracting out activities with Northrop Grumman to produce E-2D airborne command and control aircraft. The signed LOA secures the sale, which will include three E-2D aircraft, engineering work, spare parts, support equipment, training, and follow-up support, subject to funding approved by Congress. The award of the contract is scheduled for 2022, with the delivery of the planes to France in 2028 at the latest”, explains the manufacturer.

France has thus become, after the United States and Japan, the third country to order E-2D Hawkeye. Only the French Navy and the US Navy will use this aircraft from their respective aircraft carriers.

According to the US Navy, the LOA was signed on December 2. The amount of 2 billion dollars mentioned by the DSCA is the maximum value of the contract. “The E-2 / C-2 program office looks forward to continuing a long-standing partnership with France and starting a new chapter with E-2D,” commented Captain (Navy) Pete Arrobio, Office of the airborne command and control systems program, before stressing that this can only promote interoperability between French and American forces.
Compared to the E-2Cs in service at the 4F, the Advanced Hawkeye will provide significantly improved capability, in particular thanks to Lockheed-Martin’s AN / APY-9 mechanical and electronic scanning radar which, with its ability to simultaneously track a greater number of objectives [air and naval] at 360° and over long distances, will give the carrier strike group a more detailed knowledge of its operational environment. In addition, it has greater autonomy since it can be refueled in flight.

The three future E-2Ds of the French Navy will be adapted to its specific needs. Indeed, as indicated by the General Directorate of Armament [DGA], they will each be equipped with a specific computer developed by the Industrial Service of Aeronautics [SIAé], which “will be the guarantor of the capacity of autonomous evolution of the system.”

**Nexter’s tank gun advanced technology**

On 14th April Nexter-KNDS unveiled an innovative concept. Large caliber gun system for main battle tanks (140 mm), ASCALON for “Autoloaded and SCALable Outperforming guN” is designed to overmatch the current heaviest threats.

Its modular open system architecture will facilitate its technical evolutions to face future enemies in the 2040-2050 timeframe.

Company of the French-German Group KNDS (KMW – Nexter defense Systems), Nexter aims for the full maturity of its solution by 2025. In the long term, its modular and open architecture design will facilitate European cooperative projects like the Main Ground Combat System program (MGCS).

Beyond technology, this concept lays the foundations of the next European battle tank gun and ammunition standard as ASCALON offers a renewed platform of transformations and evolutions. In that perspective, ASCALON is one of the French contributions to European tank projects.

**7 Calendar**

- **May 5, 2021** Official commemorations for the bicentenary of Napoléon Bonaparte’s death: French President Emmanuel Macron’s speech at the *Institut de France* and wreath laying at Napoleon’s tomb in *Les Invalides*.
- **June 5-6, 2021** Official celebrations of the D-Day 77th anniversary in Normandy
- **July 2, 2021** Commemorative Seminar for the 30th anniversary of Operations Desert Storm/Daguet to be held at the Embassy of France in Washington, D.C.